Allied Telesyn

240E ADSL Router

IPSEC passthrough howto on the 240E

Document version 1.2

Important

This guide is written to help get you up and running as quickly as possible with a standard IPSEC connection running through the 240E. To allow a UDP IPSEC connection the standard ports are protocol UDP port 2746.

This guide complements the NZ 240E Quickstart Guide available with the 240E router or on the http://www.at-nz.co.nz website.

The full product manual can be downloaded from:
http://www.at-nz.co.nz/products/adsl.html

Latest New Zealand Quick Start documentation and SW updates can be downloaded from:
http://www.at-nz.co.nz/products/adsl.html

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Default IP and management settings for New Zealand

Router IP address	192.168.1.1
Router Subnet Mask	255.255.255.0
Management and configuration access	
User name	manager
Password	friend
For web and telnet access	

Preparation

- Network card (NIC) installed on your PC
- TCP/IP protocol is installed for the network card

Details from your ISP

- Login name and password
- DNS server(s) ip address(s)

IP Settings for Clients

For windows 95/98/ME

- From your windows desktop right click on the "**Network Neighbourhood**" icon. Select **Properties.**
- From the **Configuration** tab select TCP/IP -> xxx where xxx refers to the network card (NIC) in the PC.
- Click **properties.**
- Select the **IP address tab.**
- Click the option to **Specify an IP address.**
- Enter **IP address** = 192.168.1.2
  Subnet Mask = 255.255.255.0
- Click on the **Gateway** tab.
- Set the **New Gateway** = 192.168.1.1 **Click** the **Add button**.
- Click on the **DNS** tab, click **enable DNS**
- Enter your ISP's DNS server IP address. **Click** the **Add button.**
- If you don't know the ISPS DNS server use 203.96.91.1
- Click **OK** then **OK** to save the settings.
- You may be asked to **restart** the PC. **Click Yes**

For Windows 2000/XP (see Figure 1)

- **Settings - Control panel – Network Connections**
- **Click Properties**
- Open **Local Area Network Connections**. **Double Click** Internet protocol (TCP/IP)
- Select Use the following IP address
- **IP address** = 192.168.1.2
  Subnet mask = 255.255.255.0
  Default Gateway = 192.168.1.1

- Select Use the following DNS
  Preferred DNS = 192.168.1.1
  Alternate DNS = 203.96.91.1

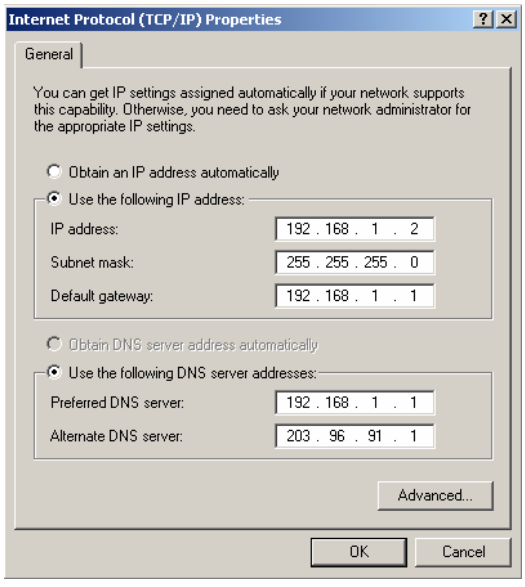

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 2
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 1 . 1
Alternate DNS server: 203 . 96 . 91 . 1
Advanced...
OK
Cancel

Figure 1

Information on IPSEC/VPN/ADSL

IPSEC on a 300,400,700,rapier series switch/router
http://www.alliedtelesyn.co.nz/documentation/arrouter/241/pdf/ipsec.pdf

IPSEC RFC/ITEF
http://www.ietf.org/html.charters/ipsec-charter.html

Howstuffworks.com VPN
http://www.howstuffworks.com/vpn.htm

Howstuffworks.com ADSL
http://www.howstuffworks.com/dsl.htm

Connecting to the 240E

Opening a web connection

To run the AT-AR240E web interface, ensure that your Web Browser is Microsoft® Internet Explorer 5.0 (or later) and disable any proxy settings on your Web Browser. Enter the IP address (*with the http:*) **http://192.168.1.1:8080** in the browser's Open Location windows and press **Enter**. You will be required to login as follows:

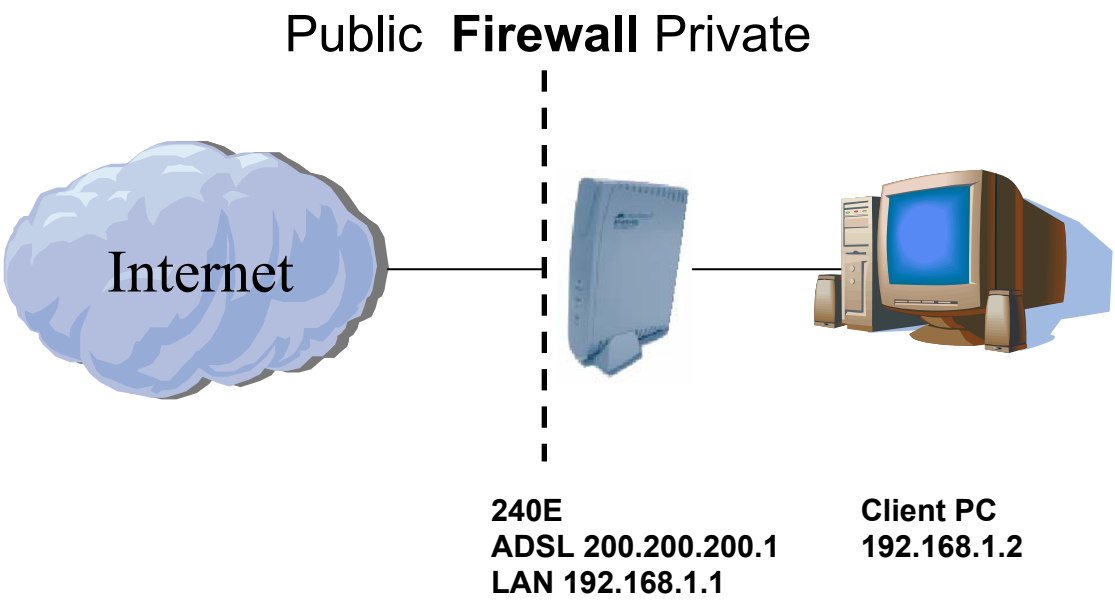
Username = manager
Password = friend

Assuming that the 240 has the following completed

1.1. **ADSL** connection has been setup

If not then please see **NZ 240E quick start guide**
http://www.at-nz.co.nz/products/adsl.html

Example use of a 240E in a IPSEC VPN

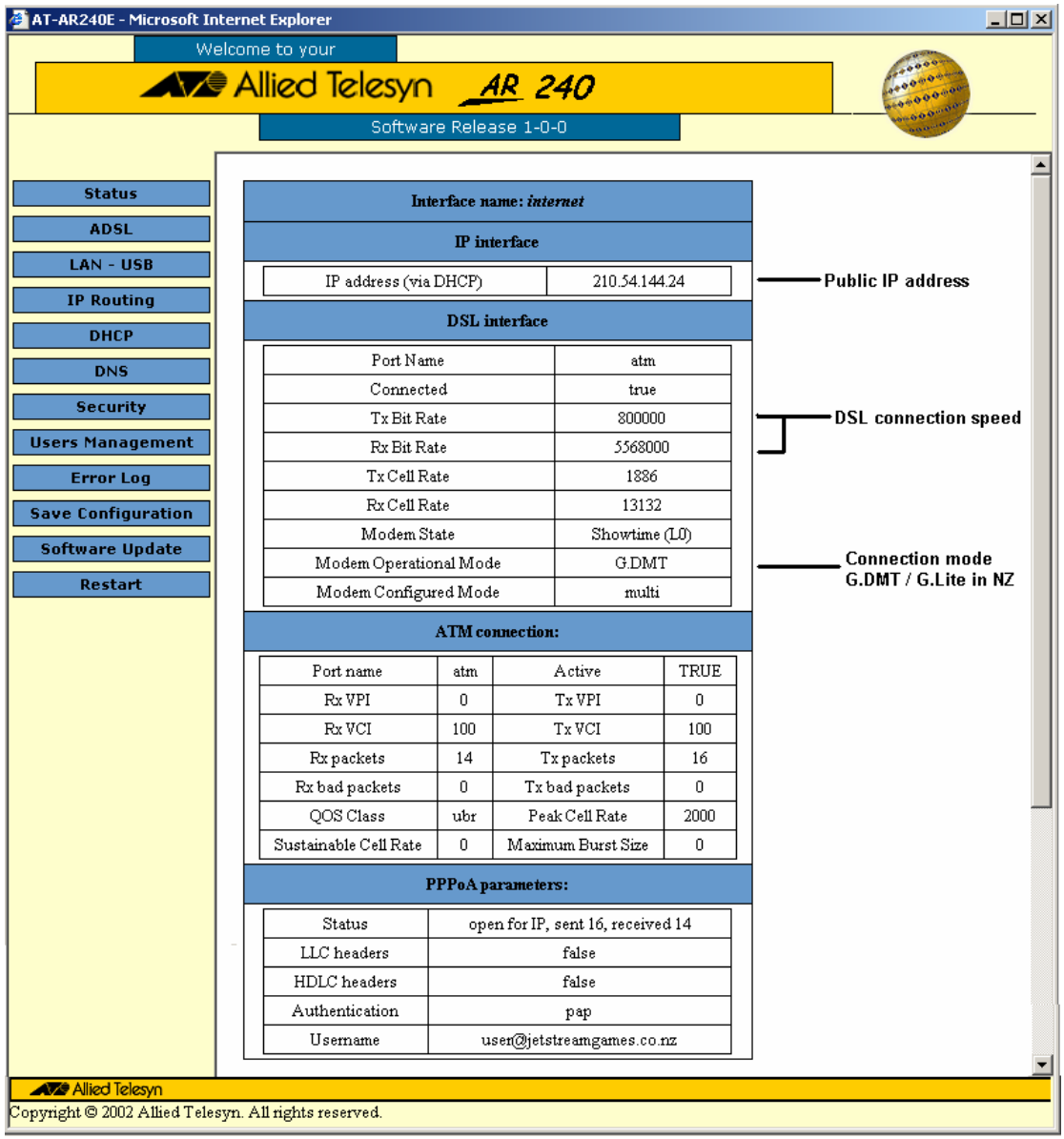


The PC is running a VPN client and connects to a corporate VPN via the internet. The 240E can pinhole to a VPN concentrator like the AR-320S using a similar setup. Please contact a Allied Telesyn Reseller for more info.

Finding the 240E's Public IP

1. To find the public ip address on the 240E press the **blue "Status"** Button

2. **Click** on the **yellow** "**internet**" button to display your **internet IP address** and **DSL Connection rate.** Write you're your **public ip address** below for later when you need to set up pinholes in the NAT. **Public ip =** _____



NAT Setup

Enabling and Setting up NAT

Step 1 Press the blue "**Security**" button on the left.

NAT has to be enabled between the internal and the external interfaces.

Step 2 Click the **enabled** radio button at the top and press yellow **apply** button. The screen should change from the screen below(figure 2) to the one below that (figure 3).

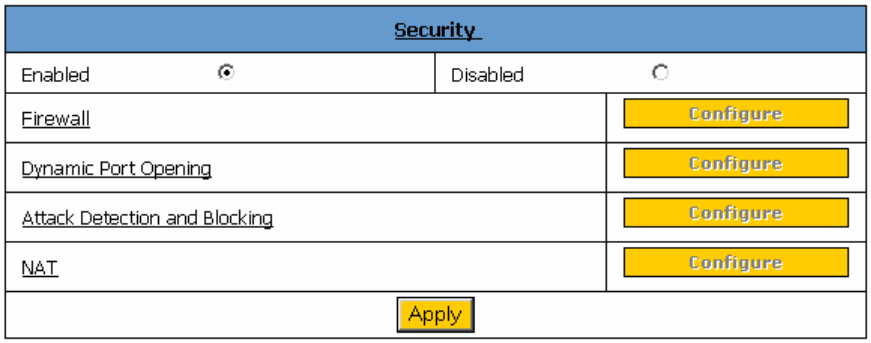


Figure 2

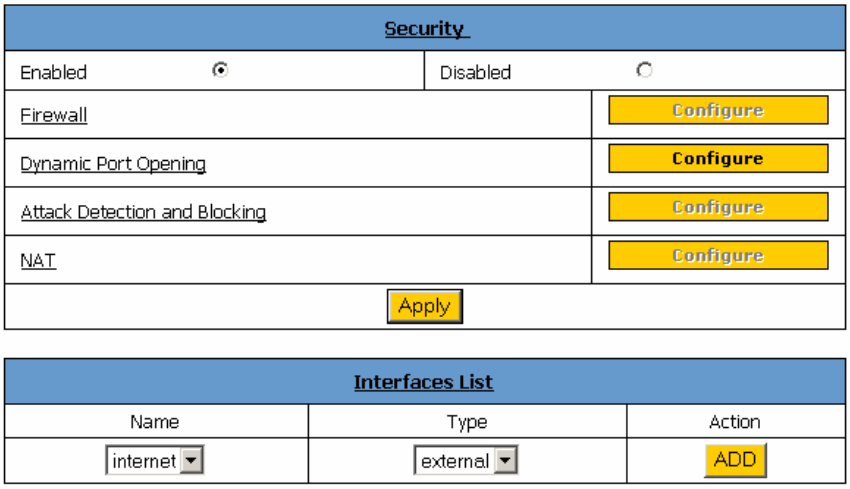


Figure 3

Define NAT interfaces

Step 3 You can now define security interfaces from the drop down boxes. Define the security interfaces as follows: (see Figure 4)

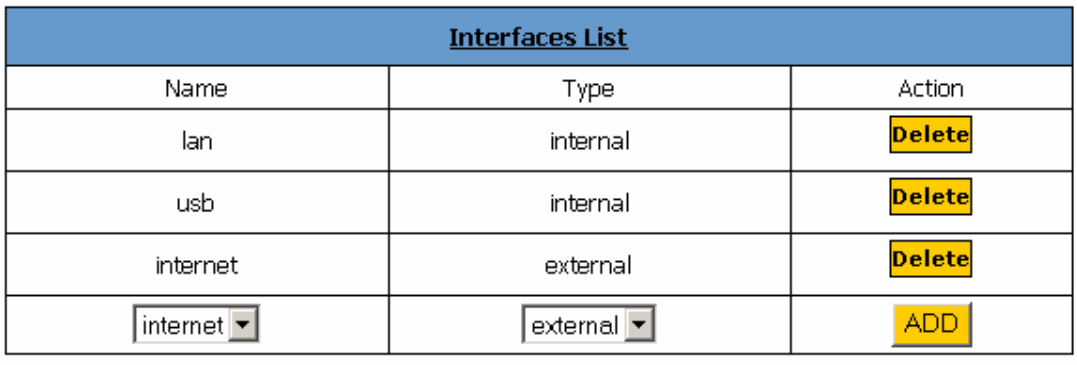


Figure 4

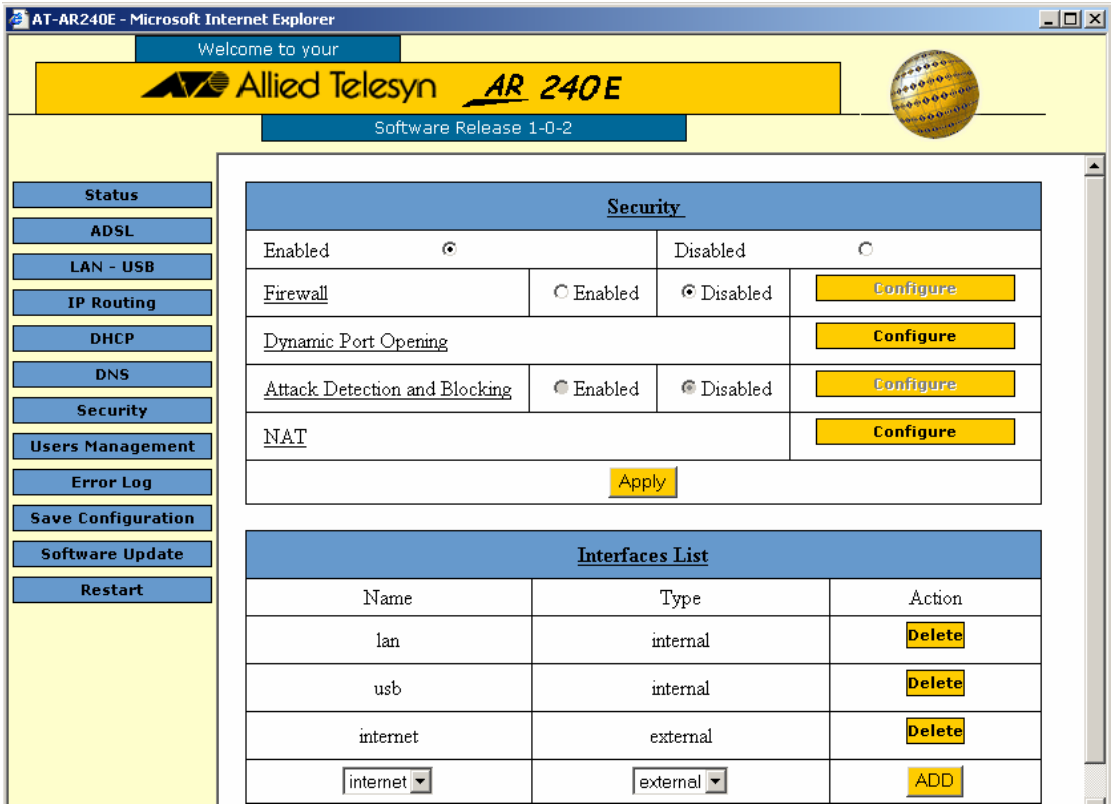


Figure 5

1. Now click on the yellow **configure** button for NAT and within the NAT window click **configure** for the "internet" row. Then click, "**enable NAT to internal interfaces**". The screen below appears and internet browsing should now be possible.

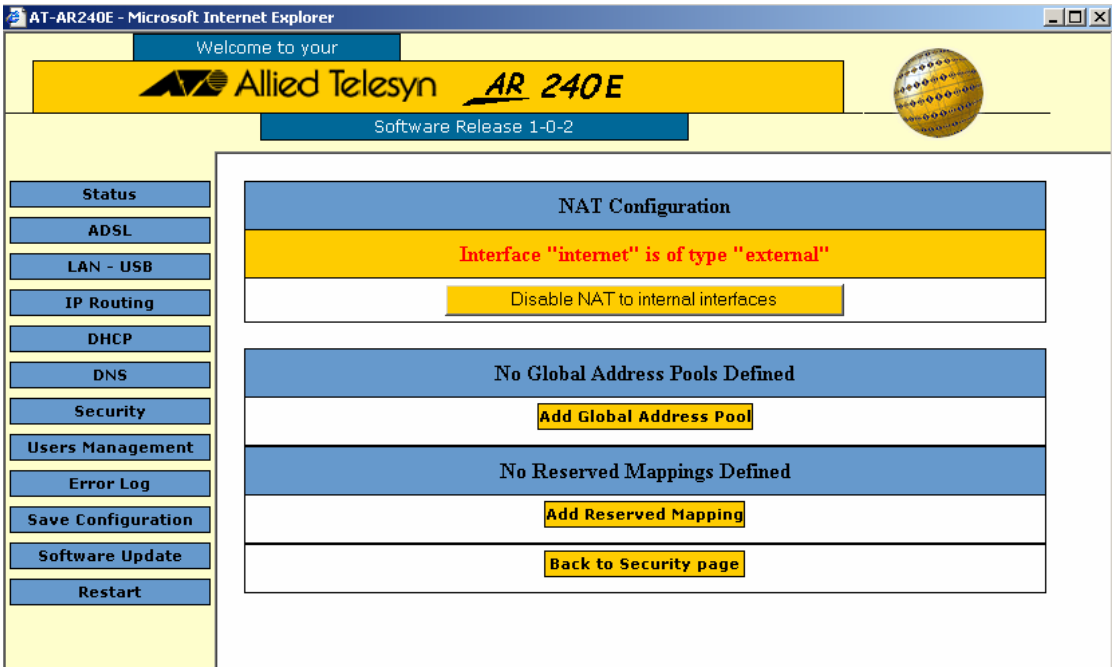


Figure 6

2. Now you need to add pinholes for the IPSEC connection. Click on the "**Add Reserve Mapping"**. See figure 6

3. Press the **yellow** "**Configure**" button.

ISAKMP pinhole (reserve mapping)

Used for "shared secret" key exchange.

4. First pinhole is for the ISAKMP traffic. Input the **Global IP** the **Internal IP**, Protocol **UDP** and **port number** is **500** and press **apply.**

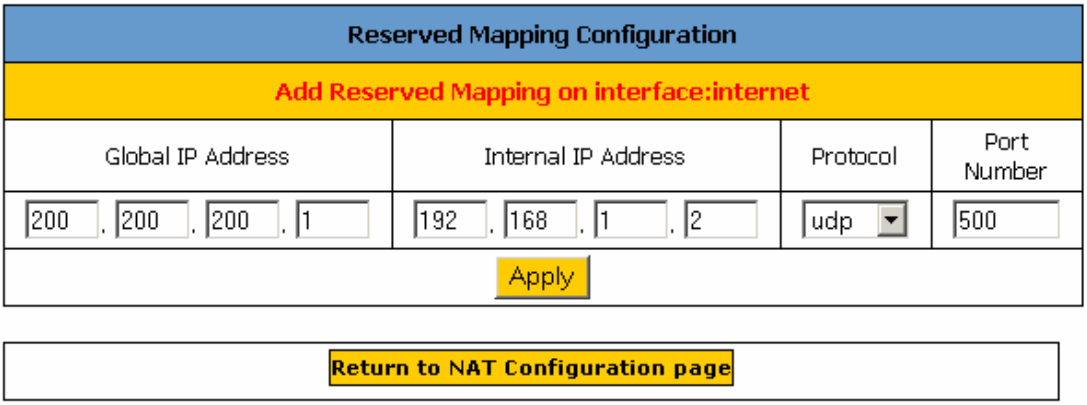


Figure 7

IPSEC pinhole (reserve mapping)

5. Second pinhole is for the IPSEC encrypted traffic. Input the **Global IP** the **Internal IP**, **Protocol IPSEC** and **port number** is **0** and press **apply.**

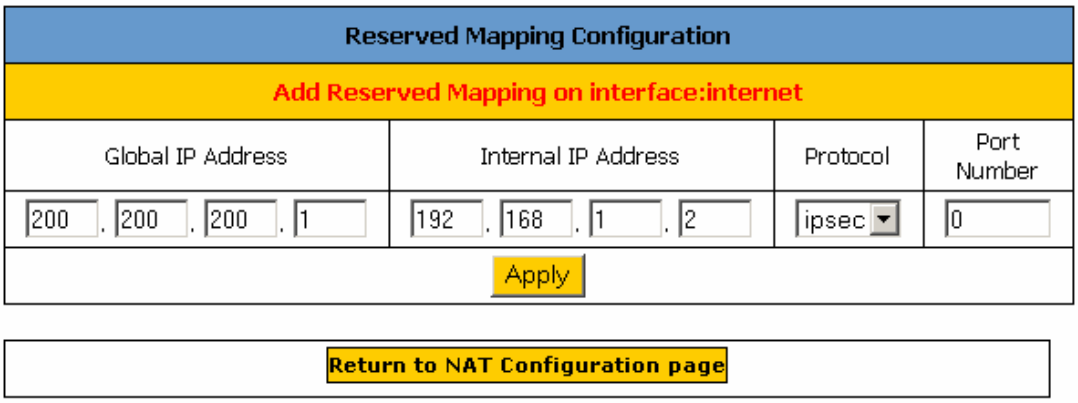


Figure 8

NOTE: Only if you have setup your unit to use UDP IPSEC
UDP IPSEC pinhole – Use only if necessary

9. The ISAKMP "pinhole" is needed as well as IPSEC UDP "Pinhole" for IPSEc over UDP. Input the **Global IP** the **Internal IP**, **Protocol UDP** and **port number** is **2746** and press **apply.** The ports for UDP IPSEC differ between different vendors but the standard port is 2746.

__Note__: your global ip address can be obtained from the __status__ (home) page and then click on the __internet__ adsl definition. See page 6

Saving Settings

1. **Click** on the blue "**Save Configuration**" button. The screen will show Figure 9. Press the yellow "Save" button. The window will remain for up to a minute as the configuration is saved. Once the configuration is saved the screen will show Figure 10 and the 240E setup has finished.

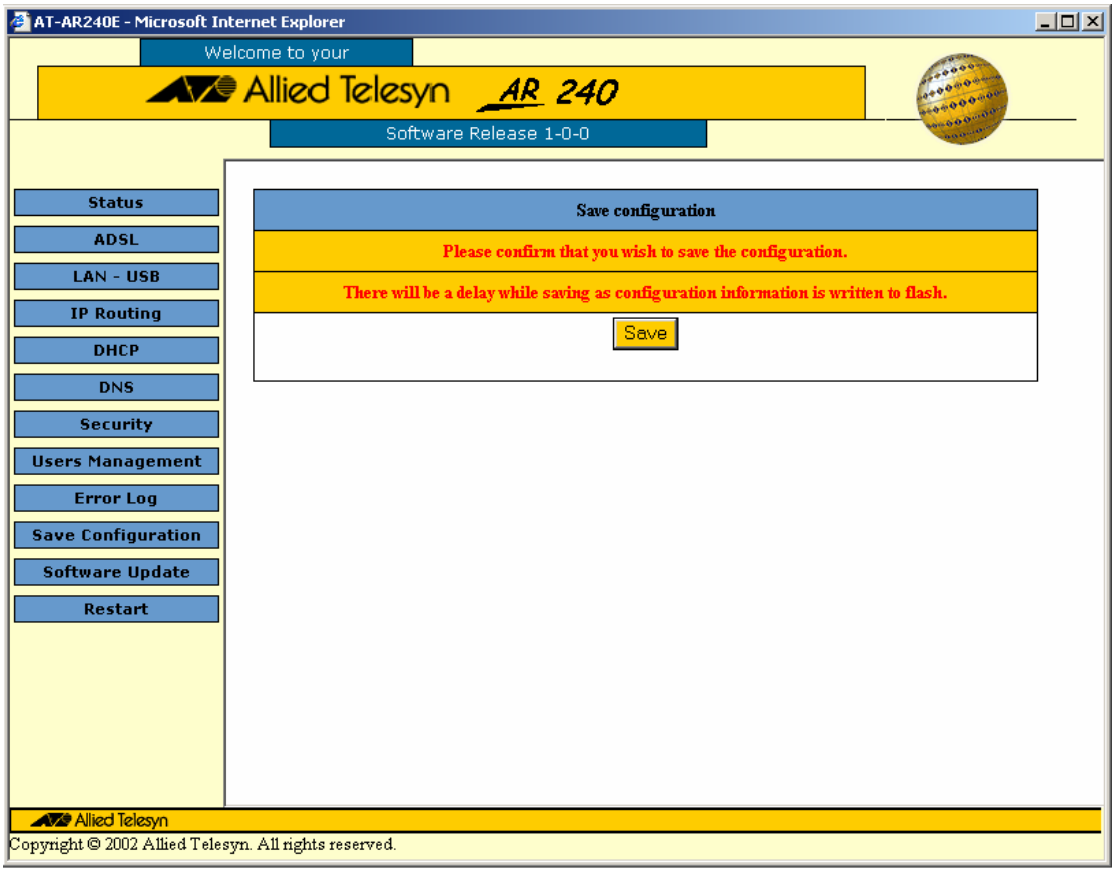


Figure 9

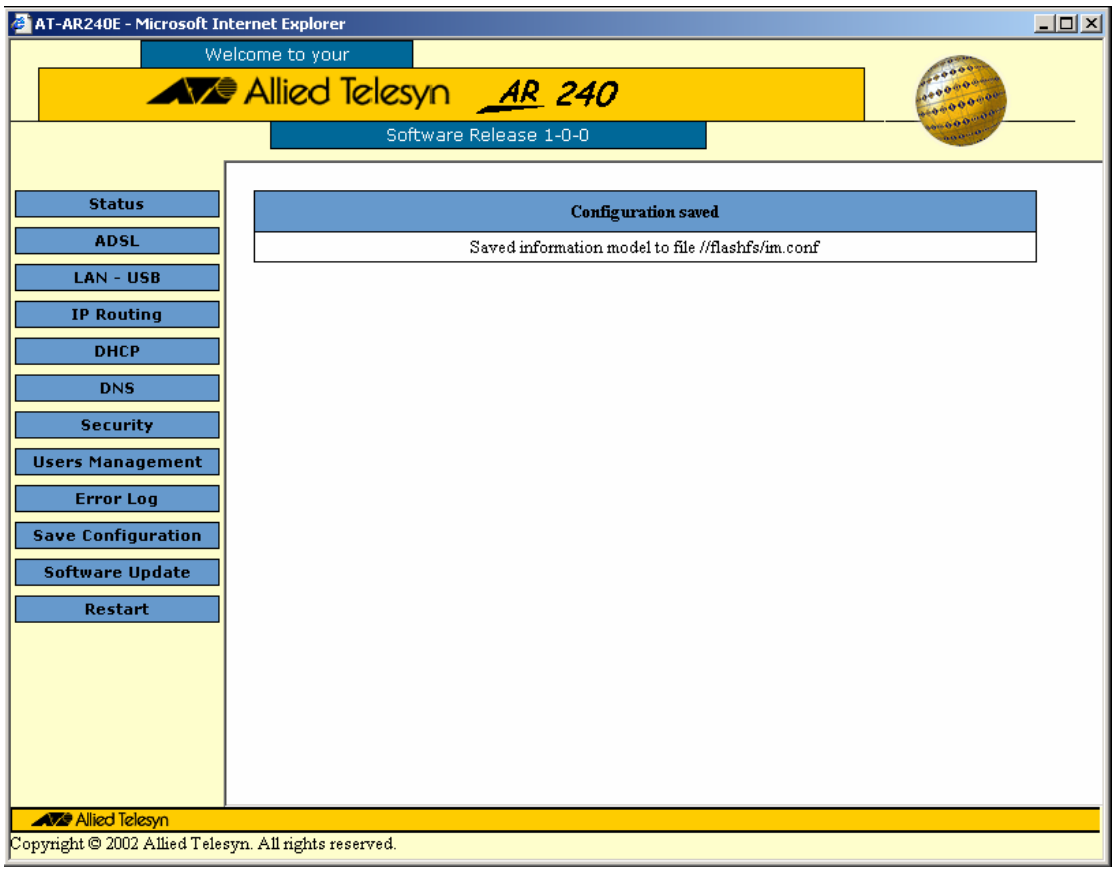


Figure 10 Configuration Saved

Adding Firewall Functionality (for advanced users)

To add firewall functionality the following steps are required.

1. **enable** firewall on the security page and then press **apply**.

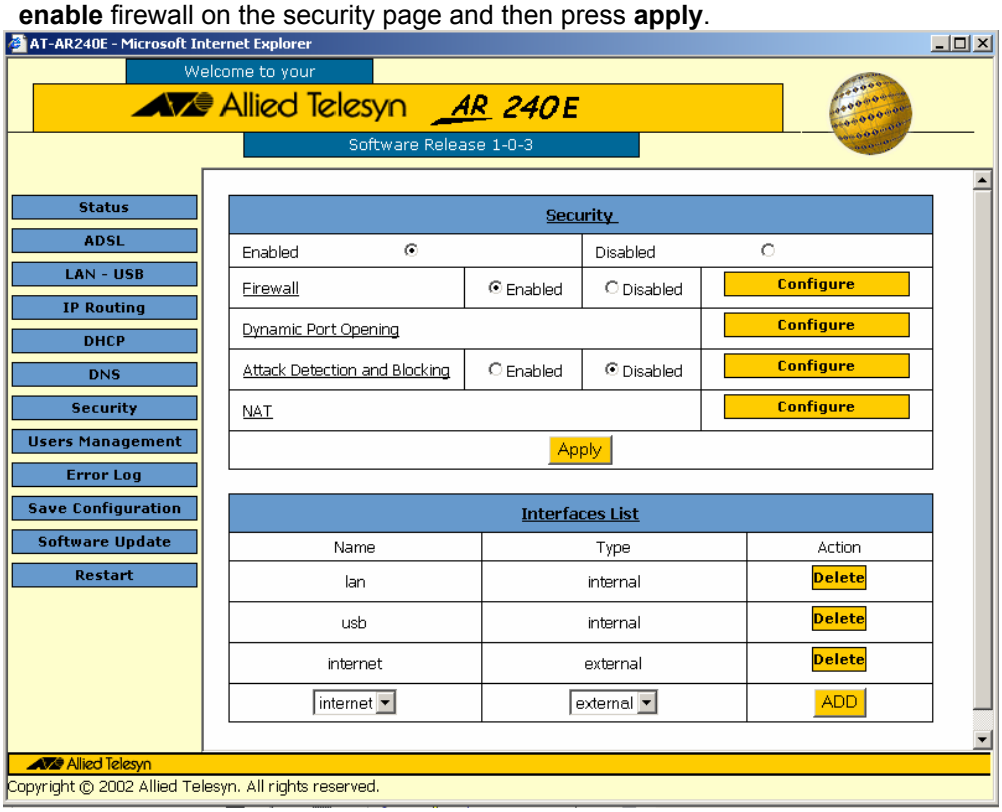
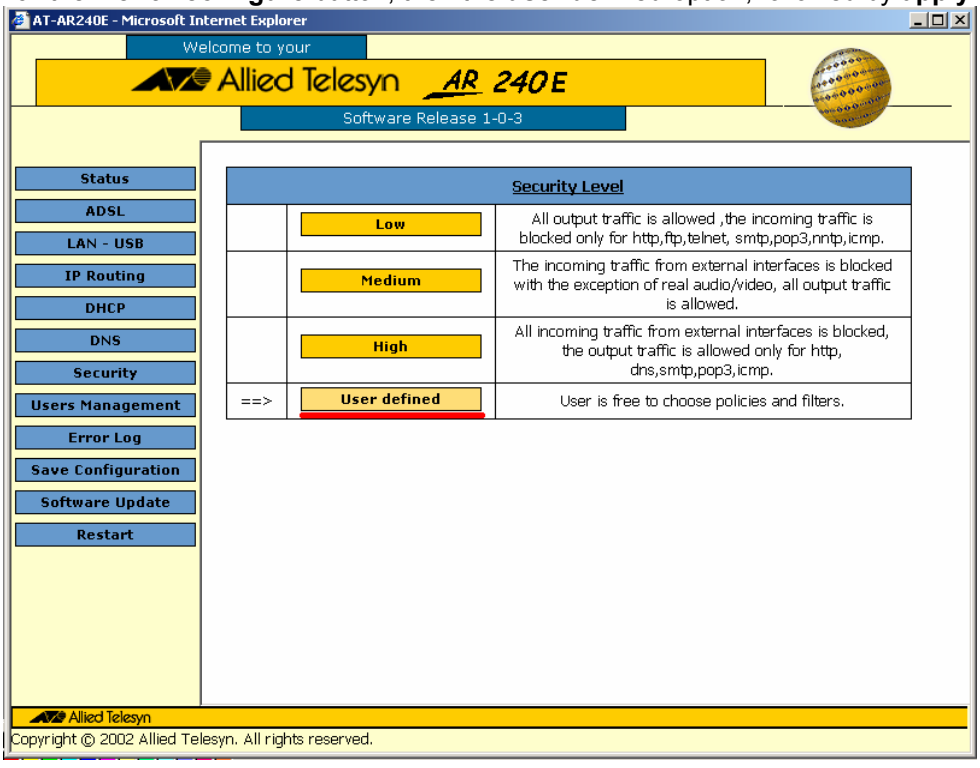


Figure 11

2. Allow all out going connections and incoming pin hole entries
3. Click the firewall **configure** button, then the **user defined** option, followed by **apply**.



4. Click on the “Internal – External “ policy **configure** button.

   Note: Even thought the DMZ policies are not used in the below example they SHOULD NOT be removed.

   For a typical network it is recommended that the user defined configuration be made more flexible by deleting all filters(see figure 13) and re-adding them as follows:
   Add the in-bound filters to match the NAT pin holes. Section 5 and 6.

   Note: Filter order is important. If corresponding filter entries are required to match In-coming NAT entries, this must be done before the global entries which allow every thing out and block all remaining incoming connection requests.

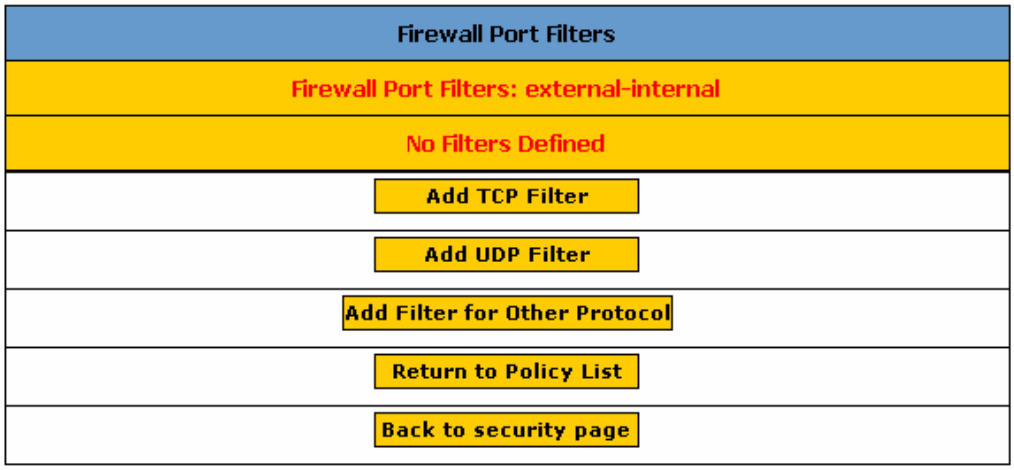


Figure 13

ISAKMP Firewall Filter

5. Click the yellow “**Add UDP filter” button.**
   Start Port: 500
   End Port: 500
   Inbound: Allow
   Outbound: Allow
   Then press the yellow “**Apply**” button (see Figure 14)

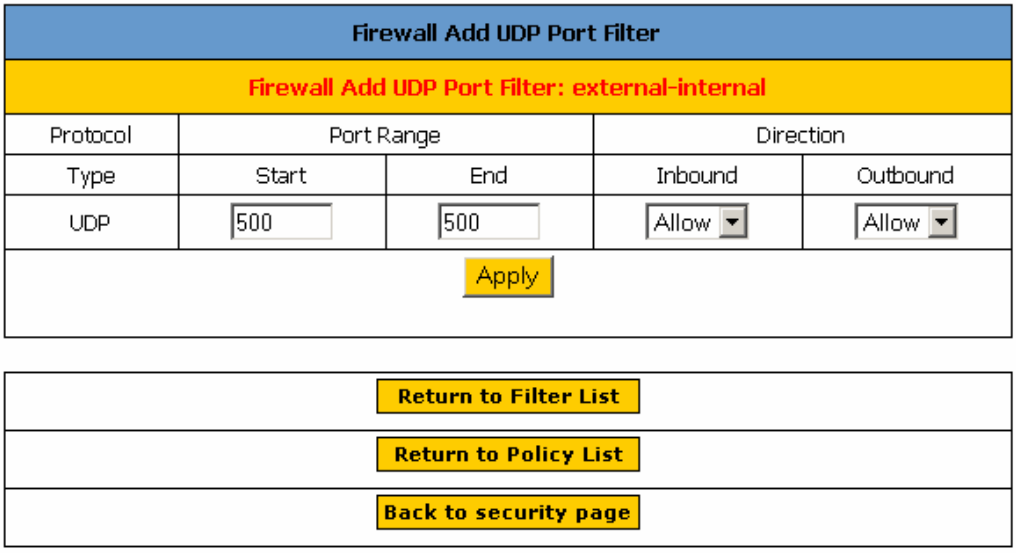


Figure 14

IPSEC (protocol 50) Firewall Filter

6. Click the yellow "**Add filter of other protocol" button.**
   Protocol: 50
   Inbound: Allow
   Outbound: Allow
   Then press the yellow "**Apply**" button (see Figure 15)

Firewall Add Generic Protocol Filter

Firewall Add Generic Protocol Filter: external-internal

Protocol	Direction	
	Inbound	Outbound
50	Allow	Allow

Protocol can be any Protocol Number or a Protocol Name. The following table lists all recognized names:

Protocol Number	Protocol Name
1	ICMP
2	IGMP
3	GGP
4	IP
8	EGP
9	IGP
46	RSVP
47	GRE
50	IPSEC
89	OSPFIGP
92	MTP
94	IPIP

Apply

Figure 15

UDP IPSEC Firewall Filter – Only use if necessary

7. Click the yellow "**Add UDP filter" button.**
   Start Port:2746
   End Port: 2746
   Inbound: Allow
   Outbound: Allow
   Then press the yellow "**Apply**" button

8. Click the yellow "**Add TCP filter" button.**
   Start Port:1
   End Port: 65000
   Inbound: Block
   Outbound: Allow
   Then press the yellow "**Apply**" button

9. Click the yellow "**Add UDP filter" button.**
   Start Port:1
   End Port: 65000
   Inbound: Block
   Outbound: Allow
   Then press the yellow "**Apply**" button

10. Click the yellow "**Add filter of other protocol" button.**
    Protocol: 1 (ICMP)
    Inbound: Block
    Outbound: Allow
    Then press the yellow "**Apply**" button .

Saving Settings

1. **Click** on the blue "**Save Configuration**" button. The screen will show Figure 16. Press the yellow "Save" button. The window will remain for up to a minute as the configuration is saved. Once the configuration is saved the screen will show Figure 17 and the 240E setup has finished.

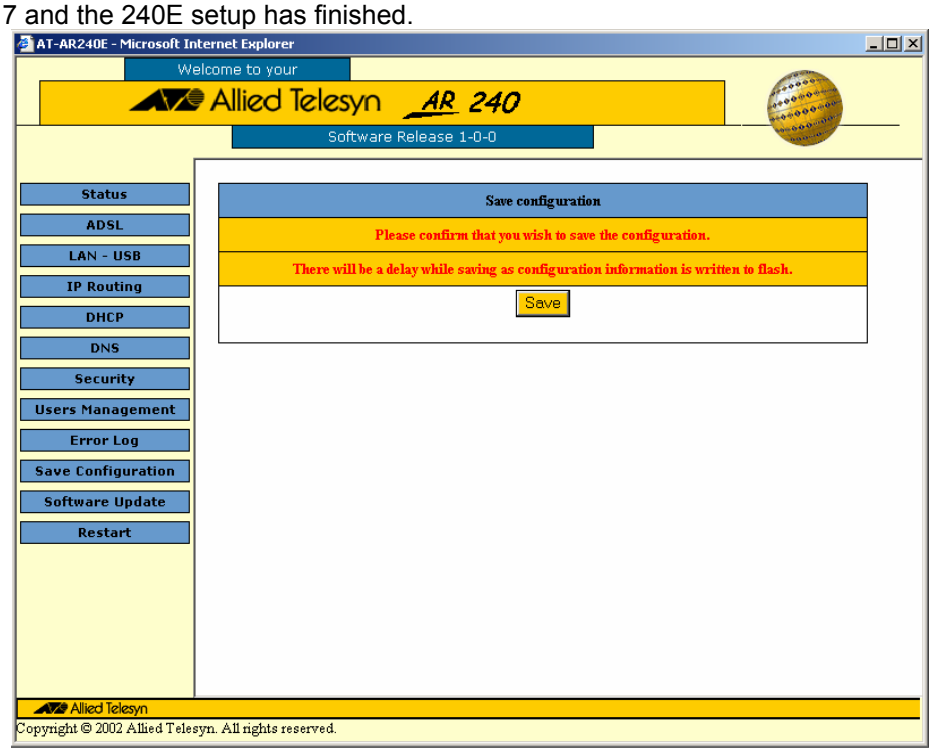


Figure 16

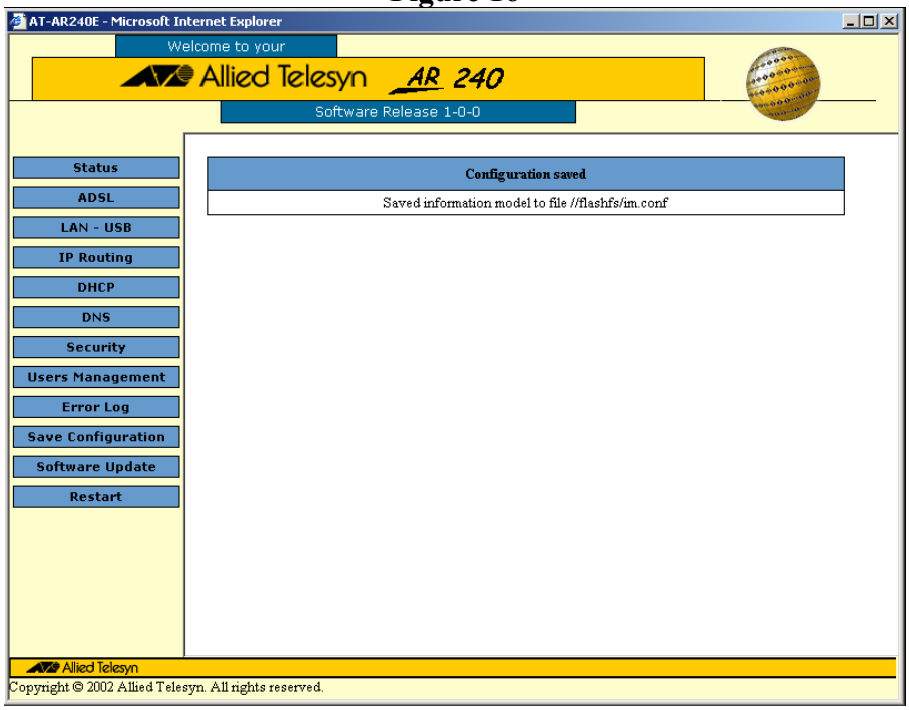


Figure 17 Configuration saved

Help

Always check that the router is installed properly. Check the website for information and how to troubleshoot the router. If you have difficulties contact your reseller or distributor for technical assistance relating to warranties, installation and operation. They will escalate the problem your having through the appropriate channels.

New Zealand Distributors

Connector Systems Ltd
5A Pacific Rse
Mt Wellington Auckland
Free Phone: 0508 Call CSL

WWW: http://www.connectorsystems.co.nz
Email: sales@connectorsystems.co.nz

Express Data NZ
Express Data NZ Ltd
Level 12, Microsoft House
3-11 Hunter Street
Wellington
Free Phone: 0800 336 427

WWW: http://www.expressdata.co.nz
Email: sales@expressdata.co.nz

Renaissance Ltd
92 Beachcroft Ave
Onehungha Auckland
Free Phone: 0800 800 905

WWW: http://www.renaissance.co.nz
Email: info@renaissance.co.nz

Allied Telesyn NZ Sales

Email: at-nz@alliedtelesyn.co.nz
Web: http://www.at-nz.co.nz
Phone: 04 566 4438 (Mon-Fri, 9am-4pm)